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June 2001

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## Brooks opens joint research center

*by Rudy Purificato, 311th Human Systems Wing*

BROOKS AFB, Texas — The Air Force Research Laboratory and the Department of Defense Joint Non-Lethal Weapons Program Integrated Product Team, as known as JNLWP-IPT, signed an historic agreement Thursday, June 7 at Brooks Air Force Base. The agreement launched a new era for non-lethal weapons development by the establishment of the Joint Non-Lethal Weapons Human Effects Center of Excellence, or JNLW-HECOE.

*Center opens continued on page 5*



**LAUNCHING OF A NEW ERA** — Air Force Research Laboratory Commander Brig. Gen. Paul D. Nielsen (center) together with Marine Corps Col. George Fenton, director of the Joint Non-Lethal Weapons Directorate preside over the ceremonial ribbon cutting of the Joint Non-Lethal Weapons Human Effects Center of Excellence. Lt. Col. Dennis M. Scholl, AFRL Human Effectiveness Directorate, Bioeffects branch (pictured left) looks on. (USAF photo by SSgt. Sabrina Johnson)

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Winter 2001

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<http://extra.afrl.af.mil/news/index.htm>

## SN Directorate hosts ribbon cutting

by Tiffany Pitts, ASC Public Affairs

WRIGHT-PATTERSON AFB, Ohio — On Thursday, April 19, the Air Force Research Laboratory Sensors Directorate (AFRL/SN) hosted a ribbon cutting ceremony for the new distributed center. AFRL/SN contracted with Mercury Computer Systems Inc. to supply the \$2.2 million system.

The PowerStream MP-510™ systems will be used to advance target recognition research by decreasing the time from development to deployment of applications embedded in aircraft.

“Within the Sensors Directorate, the Distributed Center is used to advance the state of the art in automatic target recognition to enable intelligent combat ready systems for the future,” said Capt. Paul Harmer, Distributed Center technical services director.

The DoD’s High Performance Computing Modernization Program will enable the Sensors Directorate to use Mercury’s high performance, real-time signal processing system to develop computer software that recognizes unique target characteristics.

“This Distributed Center provides a super computing environment which can be used by government, academic, and commercial users for embedded, real-time signal and image processing applications,” Harmer said. “It allows for a smooth transition of large and complex processing to current aerospace platforms by providing a development system mirroring those flying today.”

Regarded as one of the most powerful signal processing systems in the world, the PowerStream MP-510 fuses the information from radio frequency and electro-optical sensors. It improves the reliability of the target and threat identification process, while providing improved situational awareness in the battlespace. @

“This brings revolutionary computational performance to the Air Force Research Laboratory and gives researchers the ability to

## Find additional features on the web.....

**Dr. Joseph Janni retires as director of AFOSR**

**Starfire Optical Range featured on Astronomy Day**

**Former Air Force Secretary Peters visits lab exhibit**

**AF Academy students build satellite for 2003 launch**

**Students from 13 high schools display “space” projects**

# AFRL Executives recipients of Meritorious Rank Honor

by Jill Bohn, AFRL Public Affairs

WRIGHT-PATTERSON AFB, Ohio — Air Force Research Laboratory (AFRL) executives Robert J. May, Jr. and Raymond P. Urtz were honored as recipients of the Presidential Meritorious Executive Rank Award during a ceremony at the Pentagon on April 27.

Administered by the Office of Personnel Management, the award acknowledges a small group of career Senior Executives who have demonstrated leadership of vital federal programs, fostered partnerships and community solutions to achieve results, and continuously focused on promoting jobs more effective and efficiently.

May was selected for the award based on "his unique blend of technical expertise, business skills and sound judgment" in meeting schedule, cost and performance objectives.

As Propulsion Product Group Manager, Kelly Air Force Base, Texas, from 1997-1999, May was successful in the oversight of three geographically separate propulsion directorates with 5,000 employees and an annual budget in excess of \$2 billion. May was responsible for cradle-to-grave management of nearly every jet engine in the Air Force (AF) inventory, which includes over 22,000 engines in worldwide operation and is valued at nearly \$30 billion.

May forged an effective, integrated propulsion team that met numerous challenges from providing engine support for over 17,000 combat sorties flown by Air Force warfighters in Operation Allied Force to dealing with the turmoil associated with the Base Realignment and Closure Commission (BRAC) decision to close a major Air Force engine depot.

May currently holds the position of AFRL Executive Director, Wright-Patterson AFB. He is the principal assistant to the commander and the senior civilian executive responsible for managing the Air Force's more than \$2 billion science and technology program.

In his citing for the award, Urtz was credited for "extraordinary leadership from 1990 to 1999, in advancing science and technol-

ogy in command and control for the warfighter."

This is the second time in seven years he has received the award. He was appointed



Robert J. May Jr.



Raymond P. Urtz

to the Senior Executive Service (SES) in

1984 and received his first Presidential Meritorious Executive Rank Award in 1993.

As director of the Information Directorate, Urtz oversees an annual budgeted of more than \$500 million and directs the activities of nearly 900 military and civilian scientist, engineers, and administrative and support personnel. The directorate serves as the Air Force's center for the advancement and application of information systems science and technology for aerospace command and control, and its transition to air, space and ground systems.

In 1993, BRAC identified Griffiss AFB, the host base for Rome Laboratory, for closure and directed the Rome Laboratory become a self-sufficient stand-alone facility. Under Urtz's leadership support personnel requirements were reduced 55 percent compared to when Griffiss AFB was open, considerably lowering operating costs.

The Meritorious Executive award is given for long-term accomplishments to no more than five percent of career SES members. May and Urtz are among 10 Air Force executives and 287 from throughout the federal government to receive this year's award. Currently there are 6,000 career members of the SES. @

## Argus aircraft leaves Kirtland AFB due to lack of funds

by Conrad Dziewulski, Directed Energy Public Affairs

KIRTLAND AFB, N.M. — A long-time familiar sight and a unique flying research laboratory has disappeared from the skies. The C-135E aircraft known as Argus with its distinctive Tasmanian devil nose decor flew its last data-gathering mission last summer conducting atmospheric tests for the Airborne Laser program.

Grounded because of lack of funds for required maintenance, the aircraft was flown to the Aerospace Maintenance and Regeneration Center or "boneyard" at Davis-Monthan Air Force Base, Ariz., where it will be stored to await its final disposition.

The Argus flight test program was a unique opportunity for Air Force Research Laboratory (AFRL), allowing its highly skilled scientists and engineers to take technological developments from the laboratory and test them in the field. This flying research laboratory not only supported the Department of Defense but also the National Aeronautics and Space Administration, the Department of Energy and the Airborne Laser System Program Office.

"Its biggest capability was to provide a low-cost airborne platform for research and development," explained Capt. Craig Phillips, chief, Mission Operations. Flight costs were very

competitive with others because of Air Force flight and operations crews.

According to Phillips, it was the only Air Force C-135E capable of flying extended missions up to 50,000 feet above the earth's surface making it unique in the Air Force inventory.

The Argus program officially began in 1986 to collect data on rocket plume phenomena, reentry vehicle signatures, kill assessments and sensor checkout for the Strategic Defense Initiative Organization, the forerunner to the Ballistic Missile Defense Organization. The program and aircraft are named for the many-eyed and thus vigilant Greek mythological character.

One of its most important missions was to conduct treaty verification flights for the Defense Nuclear Agency in 1990. Major upgrades that year qualified it for ultraviolet, visible, mid-wave and long-wave infrared imaging and spectroscopy.

The current aircraft arrived here in 1990 and was owned and operated by Detachment 2 of the 452nd flight Test Squadron. AFRL's Directed Energy Directorate, Active Remote Sensing Branch of the Advanced Optics and Imaging Division managed the data gathering and analysis program. @



# Munitions Directorate receives a new Senior Reservist

by Rex Swenson, Munitions Directorate Public Affairs

EGLIN AFB, Fla. — Air Force Reserve Lt. Col. John McKeeman recently became the senior reservist for the Air Force Research Laboratory Munitions Directorate (AFRL/MN) replacing Col. Mike McClendon.

McKeeman came from the AFRL Sensors Directorate at Wright-Patterson AFB, Ohio, where he was a program manager for infrared missile warning systems.

“My vision is to fully integrate Munitions Directorate reservists into the active force by injecting highly qualified personnel into the full spectrum of the munitions development process, in addition to providing real-time support to the active force during deployments and exercises,” said McKeeman.

The AFRL reserve program is supported by the Individual Mobilization Augmentee (IMA) program in which reservists report directly to individual full-time supervisors in the laboratory.

“Within AFRL’s Munitions Directorate, our reservists are strategically placed under supervisors in all three product divisions: Ordnance, Advanced Guidance, and Assessment and Demonstrations,” said the colonel. This allows reservists to directly impact the entire munitions development process from concept definition, to modeling and simulation, through prototype development and test, he explained.

To effectively meet the wide range of challenges presented by munitions development, Munitions Directorate reservists are seasoned and highly skilled professionals; averaging more than 14 years experience, with 80 percent holding advanced degrees. Most of the Munitions Directorate reservists work in private industry for the technology sector and bring a diverse set of technical skills as well as an external corporate perspective with them.

“By leveraging their unique civilian skills and training, AFRL/MN reservists inject added value into the development of next generation munitions at minimal cost to the directorate,” said McKeeman. “For example, two of our reservists have backgrounds in munitions testing. When the active force had last minute staffing problems supporting a test deployment for LOCAAS [Low Cost Autonomous Attack System], the reservists volunteered. They completed their annual tours at the test site in Grayling, Mich. By using reservists, the cost of hiring contractors was avoided and the testing was completed on schedule,” he said.

While the reservists complete tasks for their individual supervisors, they also pool their talents to complete team-oriented tasks. This enables them to broaden their skills, network with their peers, and exposes them to other technology areas within the directorate. Recently, three Munitions Directorate reservists came on active duty to support the AFRL operational readiness exercise. The reservists were an integral part of the team and augmented the active force that was required to support the exercise. While supporting the exercise, they used their spare time to review more than 30 Small Business Innovative Research proposals.

“By using the technical skills of the reservists, the proposal reviews were completed on schedule and alleviated the work load from the active force,” said McKeeman.



**SENIOR RESERVIST**— Lt. Col. John McKeeman, AF Reserves (left) and James Moore program manager for P-LOCAAS look at the ESAF tester McKeeman designed and built for the P-LOCAAS. The ESAF tester checks the function of the Electronic Safe and Arm Fuzes for the P-LOCAAS warhead. (USAF photo by Rex Swenson)

“While the reserves augment the active force for exercises and deployments, we also bring a unique set of civilian skills to AFRL/MN,” he said. “For instance, most of the Munitions Directorate reservists have programming skills and I have a hardware background. Together, we are building system that will check the function of the electronic safe and arm fuzes for the LOCAAS warhead.”

According to McKeeman, this software and hardware system will validate that the LOCAAS fuzes delivered by the contractor meets the requirements defined in the interface control document. Although this is a requirement for the LOCAAS program, no funding was set aside to build this system. So the reserves are building the system at no cost to the Munitions Directorate.

“I’m designing the hardware, two reservists are writing the software and we’ll do hardware/software integration at MN this spring,” he said.

“We could not execute on as many projects as we do without the infectious enthusiasm of the AFRL/MN director, Col. Thomas Masiello. He is heavily involved with our reserve program and provides constant encouragement as well as challenging, high visibility projects for the reservists,” said McKeeman.

The AFRL/MN reserve program has doubled in size since October and the colonel has applications from an additional six prospective reservists. He hopes to add a total of 12 reservists this calendar year including three enlisted positions. @

Marine Corps Col. George Fenton, director, Joint Non-Lethal Weapons Directorate, on behalf of the chair of the JNLWP-IPT, Lt. Gen. Emil Bedard, deputy commandant for Plans, Policies and Operations; and Brig. Gen. Paul Nielsen, Air Force Research Laboratory commander, signed a Memorandum of Agreement at the Frank M. Tejeda Directed Energy Bioeffects Laboratory where the new Human Effects Center of Excellence is located.

The agreement formalizes a decision made last year by the Marine Corps, as executive agent for non-lethal weapons research that created the JNLW-HECOE within the AFRL. AFRL's Human Effectiveness Directorate was selected to manage the new human effects center on the strength of its many contributions to non-ionizing electromagnetic radiation research conducted here since 1968.

Since 1994, Tri-Service radio frequency radiation and laser human effects research here has made Brooks AFB the world's largest research center for assessing human effects of directed energy. On-going AFRL non-lethal weapons human effects studies include acoustic, kinetic and TASER® (stun gun) research.

Col. Fenton emphasizes that establishing credible human effects characteristics is the foundation and a core element of the JNLW program, providing value-added to the materiel developers and users in the field.

"This (JNLW-HECOE) is one-of-a-kind in the world. The center will act as the central repository of human effects data, will analyze human effects (research) for non-lethal weapons program managers, and will coordinate human effects modeling and research efforts," said Dr. Michael Murphy, chief of JNLW-HECOE. Murphy's JNLW-HECOE team consists of associate chief Dr. B. Jon Klauenberg and several civilian contractors.

The center's primary mission is to serve as a DoD resource on human effects data during the entire life cycle of non-lethal weapons development and acquisition. The JNLW-HECOE is tasked to assess both effectiveness and risk of unintended effects for all non-lethal candidate weapon systems.

Murphy, who is also Radio Frequency Radiation Branch chief for AFRL's Human Effectiveness Directorate, said, "This (center) fits into City Base as Brooks AFB becomes an even broader center for research. I believe this agreement is the foundation for a lot of additional research work."

Besides DoD benefiting from non-lethal weapons human effects research here, other federal agencies potentially could benefit as well including the Justice Department and Department of Transportation, Murphy said. @

## Motorsport Industry turns to AFRL for advancements

by Jill Bohn, AFRL Public Affairs

WRIGHT -PATTERSON AFB, Ohio — The British-based Motorsport Industry Association (MIA) recently visited the Air Force Research Laboratory in search of mutually beneficial technological collaborations for their highly competitive and lucrative industry.

The group made a stop at Wright-Patterson Air Force Base April 9th during an exploratory tour of the United States which included visits to selected NASA sites, leading Aerospace research faculties and other relevant organization. Their mission tour was to focus on a number of technological areas including advanced materials, aerodynamics, control systems, design & manufacturing processes and human performance and identify technology transfer opportunities between the U.S. and United Kingdom.

The motorsports industry must continually explore opportunities to take on new technologies and practices from other leading industry sectors around the world.

Prior to the visit, MIA identified several areas of particular interest and a wish list of possible collaboration areas, and from the list, tours of Air Vehicles, Human Effectiveness, Materials and Manufacturing, and Propulsion directorates were scheduled.

"This visit provides us, the Air Force, and the British the opportunity to mutually benefit through the sharing of expertise in the advancement of technology that contributes to our mission requirements as well as the motorsport industry," said Doug Blair, manager of the AFRL Technology Transfer Program.

AFRL has long-been recognized for high-caliber technology and data gathered in research areas. Past auto-racing research by AFRL include the use of a high performance polymer used to protect auto racing spectators from flying debris; and methods to reduce the costs of parts manufacturing, and low-volume production, while

producing components of technically superior quality.

Founded in 1994, MIA is the official trade association that serves the UK motorsport sector. The UK represents a leading world position in motorsport engineering and services, with annual sales of nearly \$4.5 billion, of which 60 percent is in overseas earnings and exports. Representing the group were Alcon Components, Cosworth Racing and Williams F1, among other names synonymous with the motorsports industry.

"The British engineers were interested in a number of AFRL's technologies," Blair said. @



SEEKING TECHNOLOGICAL COLLABORATIONS — Dr. Ted Knox from AFRL's Human Effectiveness directorate briefs a trade mission of the Motorsports Industry Association.



# TD Spotlight --

## Human Effectiveness Directorate:

### The Power of Human Performance

by Human Effectiveness Directorate

WRIGHT-PATTERSON AFB, Ohio — The Human Effectiveness Directorate of the Air Force Research Laboratory develops, integrates, and transitions science and technology products to train warfighters; improves the interface of operators with weapon systems; and protects and sustains Air Force people to assure the preeminence of U.S. aerospace forces. The directorate is located at Wright-Patterson Air Force Base, Ohio; Brooks Air Force Base, Texas; and Mesa, Arizona.

The directorate's multidisciplinary workforce of nearly 600 civilians, officers and enlisted personnel encompasses engineering, behavioral sciences, life sciences, physical sciences, medical and health professionals, math and computer sciences, and support staff. Since much of the research effort is conducted using in-house facilities, the workforce also includes about 500 contractors and collaborators.

The directorate's science and technology program is focused into four primary thrusts: warfighter training, crew system interface, bioeffects and protection, deployment and sustainment. The research activities to accomplish these thrusts are accomplished by five technology divisions: Warfighter Training Research, Crew System Interface, Biodynamics and Protection, Directed Energy Bioeffects, and Deployment and Sustainment.

The Warfighter Training Research Division is the USAF's premier organization for research and development in warfighter training techniques and technologies. The division develops, demonstrates, evaluates, and transitions training technologies and methods to train warfighters as they fight. The mission is accomplished through an open, collaborative environment in which government, academia, and industry team with users and customers to develop and exploit new technologies, applications, and environments that will support the warfighter. The collaboration is designed to improve development, validation, and transition of needed training products to users, customers, and solution providers supporting the premise of training the way

we intend to fight and recognizing that training is the peacetime manifestation of war.

The Crew System Interface Division studies human capabilities and characteristics that could be applied to the design of equipment, operations, and work environments. Successful military performance is dependent on the effective integration of human and systems technologies. Human-centered systems promote success through superior operability, maintainability, and survivability. The ultimate advantages of technological advances in controls, displays, and information handling, remain inextricably linked to human factors such as the pilot's sensory, perceptual, cognitive, and motor capabilities; strength and anthropometrics; motivation; experience; and skills. The Crew System Interface Division ensures this linkage by anticipating future needs, developing human engineering technologies, and providing human-system integration design criteria to exploit the fullest potential of the Air Force warfighting team, irrespective of gender, mission, or environment.

The Directed Energy Bioeffects Division predicts, mitigates, and exploits the bioeffects of directed energy on DoD personnel, aerospace missions, and the environment. The division's research focuses on the bioeffects of optical and radio frequency radiation and mechanisms of action, advancing health and safety guidelines and standards, and personal protection concepts. The research provides the database necessary to enable development of effective non-lethal weapons. The division supports warfighters with the biological effects information necessary to safely train, communicate, fight and win on the directed energy-saturated battlefield of the future.

The Frank M. Tejada Directed Energy



Bioeffects Laboratory, a part of the Directed Energy Division, is the center for non-ionizing radiation hazards research. This tri-service reliance activity in directed energy bioeffects includes laser and radio frequency radiation. The U.S. Army Medical Research Detachment of Walter Reed Army Institute of Research and the Naval Health Research Center Detachment are a part of this reliance activity at Brooks AFB.

The Biodynamics and Protection Division develops technologies for new equipment and procedures to improve warfighter performance, protection, and survivability. Countermeasures are developed to reduce altitude decompression sickness risk for special operations, combat search and rescue, and reconnaissance missions. Protection technologies are developed to reduce the physiological and cognitive performance degradation during maneuvering accelerations. Human biodynamic response to emergency escape environments are measured and modeled to improve occupant safety and ensure accommodation of the expanded aircrew population. Warfighter fatigue countermeasures and vigilance enhancement technologies are developed to extend and improve cognitive performance in complex, long-duration mission environments. Oxygen generation technologies are developed to reduce Air Expeditionary Force deployment footprints. Technical expertise and

facilities also support DoD requirements for man rating of life support and personal equipment.

The Deployment and Sustainment Division maximizes warfighter effectiveness by improving logistician capabilities and assuring survivability in toxic environments. This division focuses on technologies which support global Expeditionary Aerospace Force operations and Agile Combat Support. The three major division objectives are: ensuring the capability and agility of Air Force logistic systems, minimizing the mission impact from toxic chemicals and chemical-biological weapon agents, and decreasing weapons system life cycle cost due to hazardous materials.

The Tri-Service Toxicology Consortium, which is a part of the Deployment and Sustainment Division, addresses critical DoD toxicology issues by leveraging the recognized strengths of each ser-

vice partner. The Consortium provides DoD with timely solutions to current and anticipated operational problems through an integrated approach to innovative toxic hazard effects research. Under Project Reliance, the Naval Health Research Center Toxicology Detachment and the Operational Toxicology Branch of AFRL's Human Effectiveness Directorate are collocated at Wright-Patterson AFB. The third element, the US Army Center for Environmental Health Research, is located at Ft. Detrick, MD. Each service maintains a toxicology research facility with unique, mutually supportive core capabilities. The Air Force specializes in toxicological modeling and dermal toxicology; the Navy in inhalation, combustion, and neurobehavioral toxicology; and the Army in environmental toxicology. @

## Dr. Lyle Schwartz appointed as new director of AFOSR

by *Laura Coens, AFOSR Public Affairs*



**Dr. Lyle Schwartz**

ARLINGTON, VA. — The Air Force Research Laboratory (AFRL) recently announced that the Air Force has selected Dr. Lyle H. Schwartz as the new director of AFRL's Air Force Office of Scientific Research (AFOSR). This appointment became effective Feb. 25, 2001. Schwartz, a member of the Senior Executive Service since 1984, has served as director of AFOSR's Aerospace and Materials Sciences directorate since 1999.

"Dr. Schwartz was chosen from some tough competition. His unique talents made him stand out from his competitors and his strong desire to help AFOSR excel will make him a great director," said Brig. Gen. Paul Nielsen, AFRL commander.

The AFOSR director is responsible for the management of the entire basic research investment for the U.S. Air Force. The director leads a staff of over 150 scientists, engineers, and administrative personnel located in Arlington, Va. and the two foreign technology offices in London and Tokyo. The AFOSR director is charged with maintaining the technological superiority of the U.S. Air Force. Each year, AFOSR selects, sponsors, and manages research relevant to Air Force needs.

Schwartz brings many years of scientific leadership experience and an extensive list of accomplishments to his new position. He earned his bachelor's degree in science engineering in 1959 and doctor of philosophy in materials science degree in 1964 from Northwestern University in Evanston, Ill. From 1964 to 1984, he was a professor of materials science and engineering at Northwestern University. In addition to teaching, from 1979 until 1984, he was the director of the Materials Research Center at Northwestern University. From 1984 to 1997, he served as director of the Materials Science and Engineering Laboratory at the National Institute of Standards and Technology in Gaithersburg, Md. In 1998, he became president of the Associated Universities Inc., in Washington, D.C.

Schwartz is known for his contributions in the areas of phase transitions in iron alloys, applications of Mossbauer Spectroscopy,

x-ray and neutron diffraction, characterization of catalysts; and policy issues concerning materials science and engineering. He has written more than 85 technical papers and is co-author of two textbooks in the field of materials science and engineering. He is a member of the National Academy of Engineering.

AFOSR invests in long-term, broad-based research into aerospace related science and engineering. To accomplish this mission, AFOSR has formed a strong, productive alliance with other government agencies, U.S. industry and the academic community. Nearly 80 percent of the research is conducted in academia and industry and the remaining 20 percent is conducted within AFRL. AFOSR's investment in basic research programs is distributed to about 300 academic institutions, 145 industry contracts and more than 150 internal AFRL research efforts. @

### Federal Women's History Month

#### "Celebrating Women of Courage and Vision"

##### April 13 - HQ Awards Ceremony

WRIGHT-PATTERSON AFB, Ohio — Recognition to Gay Dugan, Palace Knight Program Administrator; Cindy Arnett, Executive Secretary to the AFRL Commander; Tricia Randall, Secretary to the Chief of Technology Transfer and Corporate Communications Division; Sheri Warner, Military Officer Assignments Program Manager; Brenda Gable, Chief of Financial Management Analysis; 1st Lt. Julie Graham, International Program Manager; CMSgt. Barbara Nie, Superintendent Corporate Communications; Tammy Lyons, Chief of Work Force Programs and Resources Unit; Laura Leising, Plans and Programs Engineer; Jan Moore, Secretary for the Deputy and Associate Directors - Plans and Program; Beth Swigart, Personnel Liaison Assistant; Diane Henn, Acquisition Professional Development Program Manager; Sherry Valentine, Manpower Management Analyst; Janet Peasant, Project Engineer; Diana Smith, Senior Advisor for Director of Plans and Programs; Claudia Neal, Secretary for Modeling and Analysis Division; Mia McLendon, Administrative Assistant; Carrie Foreman, Secretary to the Director - Plans and Programs; Kristie Blakley, Manpower Management Analyst.

# Net Index

Due to the number of submissions we receive, some sections of *news@afrl* are available exclusively on-line. The on-line version of the newsletter allows users to view the AFRL corporate calendar, news releases generated by AFRL headquarters, operating instructions, L@b L@urels and Roundups sections.

The L@b L@urels section of the electronic newsletter is dedicated to members of Air Force Research Laboratory who receive awards and honors. The Roundups section of the electronic newsletter keeps Air Force Research laboratory employees informed about contracts AFRL has awarded. Below is an index of articles one can find in each of these on-line sections.

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- Human Effectiveness celebrates annual awards
- Volunteer efforts earn Mowery "Angel" status
- IF Engineer wins AFMC Technology Transfer award
- Gallagher, AFRL Sensors, finally receives air medal
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- Repperger named AIMBE Fellow Award Receipt
- Directed Energy Directorate Personnel win annual corporate awards
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  - Syracuse firm awarded four-year \$5,216,499 contract
  - McGrath takes on new position of AFRL Legal Advisor
  - Information directorate awards \$900,000 for research
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- TD Spotlight on the Human Effectiveness Directorate

To view the full text of these and other articles visit the *news@afrl* page on the Internet at <http://extra.afrl.af.mil/news/index.htm>.

To submit L@b L@urels or Roundups from your directorate, send a query to AFRL Public Affairs at:

**Vicki.Stein2@afrl.af.mil**  
or,  
**Anne.Gunter@afrl.af.mil**

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